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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,079	10/23/2003	Robert Allen Castlebary	PU030092	8318

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EXAMINER
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WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/692,079

Applicant(s)

CASTLEBARY ET AL.

Examiner

Lawrence B. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 2 is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☒ Claim(s) 3, 4 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 22, Fig. 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either

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“Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

4. Claim 3 is objected to because of the following informalities:

- a.) The examiner suggests “An apparatus” in line 1.
- b.) The examiner suggests applicant replace the phrase “comprising of:” with “comprising:” in line 2.

Appropriate correction is required.

5. Claim 7 is objected to because of the following informalities:

- a.) The examiner suggests “An apparatus” in line 1.
- b.) The examiner suggests applicant replace the phrase “comprising of:” with “comprising:” in line 2. Appropriate correction is required.
- c.) The examiner suggests applicant place appropriate punctuation at the end of line 4.

Appropriate correction is required.

***Specification***

6. The disclosure is objected to because of the following informalities:

- a.) In line 23 of page 1, the examiner suggests “number of samples”.
- b.) In line 26 of page 1, the examiner suggests “for a technique”.

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- c.) In line 25 of page 2, the examiner suggests “response to each”.
- d.) In line 1 of page 4, the examiner suggests applicant replace “Fig. 1” with “Fig. 3”.
- e.) In line 5 of page 5, the phrase “collectively identity of the particular one” is unclear. Appropriate correction is required.

7. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

8. Claims 5-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 5 and 7 recite the limitation “with  $n$  chosen such that  $\log_2(n) \leq x$  where  $x$  is an integer”. The specification offers no support for this limitation. The examiner makes note to page 1, lines 32-33; “with  $n$  chosen such that  $\log_2(n+1)$  is an integer  $x$  greater than zero”, page 3, lines 26-27; “so long as  $\log_2(n+1)$  is an integer  $x$  greater than zero” and page 4, line 20; “provided that  $\log_2(n+1) = x$ ”.

Claims 6 and 8 are rejected based on their dependency upon rejected claims 5 and 7, respectively.

***Allowable Subject Matter***

9. Claims 1-2 are allowed.

10. Claims 3, 4 would be allowable if rewritten to overcome the objections cited above.

11. The following is a statement of reasons for the indication of allowable subject matter:

The instant application discloses a method and apparatus for sampling a digital signal. A search of prior art records has failed to teach or suggest alone or in combination:

“a method for sampling a digital signal yielding improved jitter performance within prescribed bandwidth constraints, comprising the steps of: periodically sampling the digital signal  $n$  times during every interval  $t$ , with  $n$  chosen such that  $\log_2(n+1)$  is an integer ( $x$ ) greater than zero; generating a  $x+1$ -bit sample value after each interval  $t$ , the sample value having a first bit indicating the value of the digital signal being sampled, and  $x$  remaining bits which collectively indicate a sample interval during which the digital signal changed states if such a change did occur, and inverting the first bit of each sample value upon decoding to coincide with the change in the digital signal” as disclosed in claim 1.

“an apparatus for sampling a digital signal yielding improved jitter performance within prescribed bandwidth constraints, comprising: a sample clock for generating  $n$  periodic clock pulses during every interval  $t$ , with  $n$  chosen such that  $\log_2(n+1)$  is an integer ( $x$ ) greater than zero; a receiver for generating a  $x+1$ -bit sample value after each interval  $t$ , the sample value having a first bit indicating the value of the digital signal being sampled, and  $x$  remaining bits which collectively indicate a sample interval during which the digital signal changed states if

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such a change did occur, and the receiver inverting the first bit of each sample value upon decoding to coincide with the change in the digital signal” as disclosed in claim 3.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Vallet et al. discloses in US 2003/0095619 A1 Sample Selection and Data Alignment Circuit.

b.) Guo discloses in US Patent 5,400,370 All Digital High Speed Algorithmic Data Recovery Method and Apparatus Using Locally Generated Compensated Broad Band Time Rulers and Data Edge Position Averaging.

c.) Bergmann et al. discloses in US Patent 4,821,297 Digital Phase Locked Loop Clock Recovery Scheme.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

A handwritten signature in black ink, appearing to read 'Lawrence B. Williams', written over the printed name.

lbw  
December 4, 2006